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PATIENT PREFERENCES AND STATED ADHERENCE FOR HEPATITIS C VIRUS TREATMENTS

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OBJECTIVES: To estimate patient preferences for attributes of hepatitis C virus (HCV) treatments and the effect of product attributes on stated medication adherence. **METHODS:** HCV patients,18 years and older completed an online survey instrument that included 9 conjoint choice-format trade-off tasks. Subjects chose among pairs of hypothetical medication alternatives, each defined by chance that the medicine will eliminate the virus completely (EFFICACY), injection frequency, duration of flu-like symptoms after each injection, injection device (DEVICE), average number of days of work missed each week (LOST WORK DAYS), probability of reversible hair thinning while on treatment (HAIR THINNING), and probability of developing clinical depression while on treatment (DEPRESSION). Subjects also answered 3 rating questions assessing how often people with HCV would miss or skip doses of medications with different characteristics. We used mixed-logit methods to estimate mean relative importance weights for each attribute. We used a Heckman two-stage model to estimate first the effect of subject characteristics the effect of medication attributes on non-adherence. **RESULTS:** A total of 143 subjects completed the survey. In the model, number of flu days (FLU DAYS) was specified as injection frequency multiplied by the duration of flu-like symptoms after every injection. EFFICACY was the most important attribute. The remaining attributes were ranked in order of importance as follows: DEPRESSION, FLU DAYS, LOST WORK DAYS, HAIR THINNING, and DEVICE. Subjects with prior experience were less likely to be non-adherent and increases in the number of flu days increased the likelihood of non-adherence. **CONCLUSIONS:** The results of this study demonstrate that efficacy is the most important medication attribute to patients but medication side effects like the number of flu days affect stated medication adherence. Reducing the number of flu days by reducing the frequency of injections or the duration of flu-like symptoms after each injection may increase medication adherence.

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ASSESSING DISEASE BURDEN FOR MEASLES USING A CLINICAL AND HEALTH OUTCOMES APPROACH: A FOCUS ON LOWER-INCOME COUNTRIES

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OBJECTIVES: We developed a measles health outcomes model for lower-income countries for use in cost-effectiveness (CE) and policy models assessing measles interventions as well as long-term investment decisions for potential innovations. **METHODS:** The clinical, HO, and CE literature for measles was evaluated, including methodological issues related to using disability-adjusted life years (DALYs) and/or quality-adjusted life years (QALYs) to assess disease burden. We constructed a descriptive clinical model of measles infection depicting clinical sequelae as a health outcomes tree. DALY and QALY weights were estimated from the literature. Morbidity and mortality were considered using two alternative approaches, one based on an aggregate estimate of measles-associated disability and the other based on a detailed consideration of these sequelae. Deaths from measles were assumed to occur at 2.5 years of age. Aggregate impacts were assessed using estimates from an infectious disease model applied to 6 developing countries between 2010–2029. **RESULTS:** A focus on DALYs in the measles global health literature led us to concentrate on the aggregate and sequelae-based DALY estimates. India and Nigeria were estimated to have the greatest avoidance in life years lost and morbidity-adjusted life years (DALYs avoided; QALYs gained) due to reduced measles outbreaks, partly due to population size (e.g., >170,000 and >43,000 DALYs avoided, respectively; 3% disc. rt.). For all countries, under various scenarios and discount rates for both approaches, the mortality effect dominated morbidity effects and accounted for approximately 90–99% of the overall DALY burden. **CONCLUSIONS:** Evaluating morbidity and mortality outcomes of measles in developing nations is complex and involves substantial uncertainty. LYL effects dominated disability effects in resource-limited countries, even with higher rates of complications from measles (50–80% of cases). Several challenges include limited clinical and economic data, unavailable country-specific health-state weights, and sparse HO data for vulnerable sub-populations, such as those with HIV/AIDS or that are malnourished.

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MEASUREMENT OF SYMPTOMS AND IMPACT OF INFLUENZA: DEVELOPMENT OF THE SYMPTOM INTENSITY AND IMPACT OF INFLUENZA QUESTIONNAIRE (FLU-IIQ)

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OBJECTIVES: The assessment of new agents designed to reduce symptom severity and impact of influenza requires accurate and valid assessment of the onset, duration and resolution of the illness within clinical trials. New agents have a range of potential effects on individual susceptibility and impact of the illness. A Patient-Reported Outcome measure including two scales (influenza symptom severity and impact on well-being) was developed for use across clinical settings. **METHODS:** Items were generated directly from subjects (n = 16) with influenza through Concept Mapping, confirmed by expert input (n = 7) and supported by the review of the literature. The final questionnaire was administered to 311 subjects experiencing influenza like illness, including 22% with laboratory-confirmed influenza infection, presenting to clinicians across 25 USA sites. Items properties and scales were investigated using descriptive statistics, Item Response Theory (IRT), Confirmatory Factor Analysis (CFA), internal consistency and test-retest reliability. **RESULTS:** The patient Concept Mapping resulted in 149 concepts which clustered into daily activities, emotions and relationships. Eleven symptoms were identified from the literature. Expert content review led to item clarification, removal (n = 2) and addition of an item. Candidate items were drafted using predefined criteria including simplicity and brevity. Both IRT and CFA assisted with item selection. The Symptoms scale factored into a systemic and respiratory subscale (seven and three items, respectively) and the Impact scale covered impact on usual activities, emotional impact and impact on relationships (six, four and four items, respectively). Most sub-scales displayed good internal consistency (Cronbach ¦Á ≥ 0.8); the 3-item Respiratory sub-scale was poor (¦Á = 0.50). Test-retest indicated high reliability (intraclass correlation coefficient >0.8 for all scales). **CONCLUSIONS:** These analyses provide evidence for the content validity and reliability of the 24-item Flu-IIQ as a measure of symptom intensity and impact of influenza.

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ANALYZING INPATIENT DATA FOR HEPATITIS PATIENTS

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OBJECTIVES: To identify whether there are patterns and relationships between hepatitis and other patient values such as age, mortality rate, and certain procedures and diagnoses. **METHODS:** We use data from the 2005 National Inpatient Sample. There are 2377 patients in the dataset with Hepatitis and a control group of 2400 patients without hepatitis. We used the statistical data analysis program, SAS Enterprise Guide, to examine the data with its methods of statistical analysis, one-way frequency, kernel density estimation, table analysis and linear and logistic regression. We used exploratory data analysis. **RESULTS:** The admission age is higher in hepatitis patients than it is in patients without hepatitis (9.5 years and 11.4 years respectively). The data also showed that there is a nine-fold increase in the mortality rate in patients who were diagnosed with Hepatitis. There were more females admitted to the hospital with hepatitis than males. Disorders of the liver or procedures involving the liver increased the likelihood of the patients suffering from Hepatitis. The relationship of procedure and diagnosis codes to length of stay and total charges showed that if patients died, their age and related co-morbidities such as pneumonia, viral hepatitis and chronic non-alcoholic dependent liver disease had a great influence on the length of stay and total charges. **CONCLUSIONS:** The fact that the admission age is higher in patients with Hepatitis can be explained by the fact that Hepatitis is transmitted by blood or body fluid contact, which is more likely in older children. Since hepatitis affects the liver, it is not surprising that procedures and diagnoses involving the liver prevail in this model. Also, diseases involving internal organs can increase both the length of stay and the total charges as they are harder to treat.

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THE IMPACT OF ADVERSE DRUG REACTIONS ASSOCIATED WITH ANTI-TUBERCULOSIS MEDICATIONS ON HEALTH-RELATED QUALITY OF LIFE: A LONGITUDINAL ANALYSIS

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OBJECTIVES: Anti-tuberculosis (Anti-TB) treatment commonly results in adverse drug reactions (ADRs). This study examined the impact of ADRs on health-related quality of life (HRQL) among patients with active TB. **METHODS:** HRQL was assessed at baseline and three months of the treatment using the Short-Form-36 (SF-36). Information regarding ADRs to anti-TB treatment was obtained from electronic health charts. Linear regression was used to explore the impact of ADRs on the 3-month SF-36 outcomes. Logistic regression was performed to examine the correlation between baseline SF-36 scores and occurrence of ADRs during the first three months of treatment. Socio-demographic factors were adjusted for in all regression models. **RESULTS:** A total of 89 patients with active TB were included. During the first three months of treatment, 21 (23.6%) patients developed major ADR(s) that led to discontinuation of treatment and/or additional interventions. When compared to those who never experienced ADRs, subjects who developed major ADR(s) scored significantly lower on three SF-36 subscales: physical functioning (33.77 vs. 46.89, p = 0.033), vitality (39.13 vs. 50.08, p = 0.004), and mental health (39.16 vs. 50.28, p = 0.025). Compared to those who had no recent ADRs, subjects who experienced recent ADR(s) (within the past four weeks) had significant lower scores on the same three subscales, and also the mental component summary score. Logistic regression analyses suggested that baseline scores from the six SF-36 subscales (physical functioning, role-physical, vitality, role-emotional, social functioning, and mental health) and the two summary components were significantly associated with a higher risk of developing ADR(s) during the first three months of treatment. **CONCLUSIONS:** ADRs due to anti-TB treatment had substantial and profound impact on patients' HRQL. Poor baseline HRQL might be associated with a higher risk of developing ADRs during treatment.